

XI.—*New Bees of the Genus Halictus from New Mexico, U.S.A.* By T. D. A. COCKERELL, Entomologist of the New Mexico (U.S.A.) Agricultural Experiment Station.

(1) *Halictus tripartitus*, sp. n.

♀. Long. 6 millim.; head, seen from in front, somewhat broader than long, black, with a perceptible greenish tinge; face and cheeks thinly clothed with pale hairs; mandibles and antennæ piceous, the latter, straightened, reaching about to anterior border of scutellum, with the head thrown back. Punctuation of face strong and very close.

Clypeus pitch-black, lacking the greenish tinge of face, with large, rather sparse punctures, its anterior margin with a shining fringe of very pale golden hairs.

Thorax broadly oval; mesothorax, pleuræ, and metathorax blue-black; scutellum and postscutellum dark greenish, contrasting. Hairs on dorsum of thorax ochraceous, those on pleura whitish. Enclosed portion of metathorax rugulose, finely longitudinally wrinkled at sides.

Legs dark, with moderately dense pale pubescence, which has a golden tinge in some lights, on tibiæ and tarsi.

Wings hyaline, nervures and stigma honey-yellow; third submarginal narrowed more than one-half towards marginal.

Abdomen black, shiny, densely punctate; segments 1 to 4 with marginal bands of pale ochreous hairs, that on first segment failing in the middle.

Hab. Santa Fé, N.M., June 27, 1894, from alfalfa in Mr. Andrews's orchard (Ckll. 1140).

Very near to *H. fasciatus*, but that species differs in its green (not black) mesothorax, somewhat larger size, and in its head being slightly longer than broad, whereas in *tripartitus* it is slightly broader than long. *H. trizonatus*, Cr., is another allied species; I have a specimen from Sta. Fé which may be referable to *trizonatus* or may be a new species closely allied to it. It differs from *tripartitus* by its short third submarginal cell and black face and scutellum.

(2) *Halictus sisymbrii*, sp. n.

♀. Long. about 9 millim.; black, with sparse whitish pubescence. Head broad; ocelli shining pinkish brown; face densely punctured; clypeus nearly bare. Mesothorax finely and closely punctured, shiny. Enclosed portion of metathorax longitudinally wrinkled. Sides of metathorax

with fairly dense and long white hairs. Tegulæ shining, testaceous. Wings hyaline, nervures and stigma dark brown; third submarginal narrowed not quite one-half towards marginal. Abdomen black, shiny, very finely punctate, with a very narrow band of white pubescence at the base of second and third segments. Hairs on tarsi more or less golden.

Hab. College Farm, Las Cruces, N.M., April 16, 1895; one swept from *Sisymbrium canescens* (Ckll. 2572).

This species will be readily distinguished by its large size, unarmed cheeks, black colour, and two narrow abdominal hair-bands. The enclosed portion of the metathorax is truncate behind, not rounded as in *pectoralis*.

(3) *Halictus pectoraloides*, sp. n.

♀. This species had been confounded with *H. pectoralis*, Smith, which it much resembles. Mr. Robertson has sent me an Illinois specimen of true *pectoralis*, and the following differences are at once apparent:—

pectoralis.

Mesothorax rather dull; punctures comparatively large and close.

Parapsidal grooves obscure.

Hair-patches at lateral bases of abdominal segments 2 and 3 obscure.

Third transverso-cubital nervure gently curved.

Sculpture of metathorax coarser.

pectoraloides.

Mesothorax very shiny; punctures comparatively sparse.

Parapsidal grooves very apparent.

White hair-patches at lateral bases of abdominal segments 2 and 3 very distinct.

Third transverso-cubital distinctly bent. This is sometimes not very apparent.

Sculpture of metathorax finer.

Among the New Mexico species *pectoraloides* is recognized by its black (not at all blue or green) colour, the shiny mesothorax, and the patches of white pubescence at sides of abdominal segments 2 and 3.

In the Mesilla Valley, N.M., *pectoraloides* is very abundant. Sweeping *Sisymbrium canescens* on the College Farm, I got but two on April 12th; but on the 16th they were out in full force, and I captured eleven. While the *pectoraloides* thus became more numerous, *H. pruinus*, Rob., swept from the same flowers, diminished. Sweeping at random from the *Sisymbrium*, I got on April 12th ten *pruinus*, on the 16th but four. Did the *pectoraloides* drive them away?

Other dates for *pectoraloides* are:—Las Cruces, Aug. 5, 1893; Las Cruces, July 13, 1893, on *Solanum eleagnifolium*; College Farm, April 26, 1894, at flowers of *Erigeron strigosus*.

The first abdominal segment is often more or less covered by brown mites.

(4) *Halictus subobscurus*, sp. n.

♀. Length about 6 millim.; black, pubescence whitish, sparse. Head moderately broad; face below antennæ more or less covered with short white hairs (but not densely snow-white pubescent, as in some species), vertex minutely roughened. Antennæ brownish towards tips. Mesothorax quite dull, parapsidal grooves not apparent.

Postscutellum with pale pubescence. Enclosed portion of metathorax rounded behind, not truncate; its margin not indicated by a sharp elevated ridge, but by a rounded raised portion free from hairs; its surface anteriorly rather feebly longitudinally wrinkled. Sides of metathorax hairy; descending hind end of metathorax with a group of about 16 well-separated very distinctly plumose hairs on each side of the middle.

Tegulæ testaceous. Wings hyaline, nervures and stigma dull yellowish brown. Third submarginal narrowing rather less than half to marginal. Legs with short hairs; tarsi fulvous.

Abdomen fairly shiny, very minutely and closely punctate; not fasciate, but apical margins of segments obscurely testaceous (not distinctly so, giving the appearance of bands, as in some species). Ventral segments with bands of hairs, only conspicuous when viewed sideways.

Hab. On *Sisymbrium canescens*, College Farm, Mesilla Valley, N.M., April 12, 1895 (Ckll. 2689).

The following table has been prepared to distinguish several species more or less similar to *subobscurus* :—

Mesothorax very shiny; median and lateral grooves distinct; stigma dark; abdomen with four lateral patches of white hairs. . . .	<i>pectoraloides</i> , Ckll.
Mesothorax not so shiny.	
Stigma dark; abdomen with four more or less defined lateral patches of white hairs.	
Head decidedly longer than broad; mesothorax with larger punctures; metathorax more coarsely sculptured	<i>pectoralis</i> , Sm.
Head nearly round; mesothorax with smaller punctures; metathorax more finely sculptured	<i>quadrinaculatus</i> , Rob.
(pectoraloides has the shape of head intermediate between these two.)	
Stigma yellowish.	
Head large and broad	<i>arcuatus</i> , Rob.
Head small, moderately broad.	<i>subobscurus</i> , Ckll.
Head comparatively narrow.	<i>gracilis</i> , Rob.

An *Halictus* taken at Las Cruces on August 14, 1893, differs from *subobscurus* in having the margins of the segments very distinctly testaceous, after the manner of *lusorius*, Cr. I doubt whether it is a distinct species; it is not *lusorius*.

(5) *Halictus semicæruleus*, sp. n.

♀. Length about $5\frac{1}{2}$ millim. Head bronzy green, thorax dark blue, abdomen black. Head rather narrow; face somewhat longer than wide, strongly punctate; clypeus blackish at end, mandibles more or less reddish. Cheeks strongly bluish. Flagellum only slightly brownish towards end. Mesothorax shiny, with large punctures; median groove deep and distinct, parapsidal grooves obscure. Scutellum with large, rather sparse punctures, and between the punctures microscopically striate. Postscutellum with rather long scattered hairs. Enclosure of metathorax finely rugulose, subreticulately wrinkled, bounded by a raised but not carinate border, rounded, not truncate, behind. Sides of metathorax and pleura with whitish hairs.

Tegulæ testaceous. Wings hyaline, nervures and stigma pale honey-yellow, subcostal nervure black. Third submarginal squarish, little narrowed towards marginal; third transverso-cubital and second recurrent nervures very faint. Legs dark; tarsi (except first joint) reddish.

Abdomen black, with a greenish reflection; sides of segments 1 and 2 and whole of dorsal segments 3 and 4 thinly covered with short whitish hairs.

Hab. Santa Fé, N.M., June 20, 1894 (Ckll. 987).

The following table has been prepared to separate the species liable to be confused with *semicæruleus*:—

Mesothorax blue; tegulæ not punctured; stigma pale honey	<i>semicæruleus</i> , Ckll.
Mesothorax green (or blue-green, with tegulæ punctured, in <i>palustris</i>).	
First two abdominal segments constricted at apex; abdomen dark æneous	<i>coactus</i> , Cress.
Abdomen normal.	
Tegulæ punctured; metathorax short, broad, strongly truncate	<i>palustris</i> , Rob.
Tegulæ and metathorax normal.	
Mesothorax dull: dark blue-green	<i>floridanus</i> , Rob.
Mesothorax dull: brassy green	<i>pilosus</i> , Smith.
Mesothorax more or less shiny.	

(Robertson says the mesothorax of *pruinus* is not shiny; it is so in our New Mexico form, which otherwise agrees with the description, and which has been seen by Mr. Robertson.)

Face and metathorax bluish or blue-green.. *pruinus*, Rob.

Face and metathorax brassy green

Of the species found in New Mexico, it resembles only *pruinus*.

(6) *Halictus meliloti*, sp. n.

♀. Length about $6\frac{1}{2}$ millim. This very closely resembles *fasciatus*, and is only to be distinguished by a comparative description:—

fasciatus.

Vertex more depressed, dark bluish green, more coarsely punctured.

Mesothorax dark bluish green, median groove very distinct.

Second submarginal cell but little higher than broad.

Sculpture of enclosed space of metathorax rather coarser and a little more punctiform.

Apical bands of first two segments of abdomen distinct, though interrupted in the middle.

meliloti.

Vertex more rounded, strongly bronze-green or olive-green, more finely punctured.

Mesothorax bronze-green or olive-green, median groove indistinct.

Second submarginal very distinctly higher than broad.

Sculpture of enclosed space of metathorax consisting of very fine longitudinal grooves.

Apical bands on first two segments of abdomen hardly perceptible, those on segments 3 and 4 distinct.

Hab. College Farm, Mesilla Valley, N.M., May 1, 1895; swept from *Melilotus indica*. Of the New-Mexico species, *meliloti* resembles *tripartitus*, but is at once distinguished by the colour and shape of the head.

(7) *Halictus semibrunneus*, sp. n.

♀. Length about 5 millim. Shiny; head and thorax dark blue; abdomen piceous, with the segments faintly testaceous at apical margins. Face broad, inner orbits nearly parallel, cheeks unarmed. Pubescence of head, thorax, and abdomen sparse, short, whitish; on abdomen largely covering the bases of the second and third and the whole dorsal surface of the fourth and fifth segments. Flagellum dark reddish brown. Vertex very finely punctate. Mesothorax very shiny, with rather large but sparse punctures, median groove distinct. Scutellum shiny, sparsely punctured; postscutellum not tomentose. Upper portion of metathorax not enclosed by a raised line, very minutely roughened, very obscurely striatulate. Abdomen impunctate. Legs dark, ordinary. Wings hyaline; nervures and stigma pale honey-yellow; third submarginal narrowed less than half to marginal.

Hab. College Farm, Mesilla Valley, N.M.; taken on the

occasion of a meeting of the College Field Club, April 27, 1894.

This species might be confounded with the Sta. Fé *H. semicaruleus*; but that differs in being larger, especially in the thorax, in its more distinctly sculptured metathorax, its conspicuous erect pale brownish hairs on postscutellum, its more strongly and closely punctured mesothorax, its somewhat differently shaped head, with a green face, and its dark antennæ.

Of other species, *H. reticulatus* and *H. Hartii* differ at once from *semibrunneus* by the reticulated mesothorax; *H. apopkensis*, a Florida species, is like *semibrunneus* in lacking this reticulation, but it has the mesothorax only moderately shiny and its head and thorax are greenish.

(8) *Halictus perdificilis*, sp. n.

♀. Length about $6\frac{1}{2}$ millim. Head dark blue-green; mesothorax and scutellum brassy green; metathorax so dark blue as to be almost black. Abdomen piceous, apical margins of segments 2, 3, and 4 slightly testaceous. Pubescence of head and thorax sparse, thin, with a slightly yellowish tinge. Head moderately small; face not very broad, the portion between ocelli and antennæ strongly and closely punctured; flagellum dark chocolate-brown, not at all yellowish.

Mesothorax minutely roughened and strongly and rather closely punctured; median groove very distinct. Scutellum strongly punctured; postscutellum with long subochraceous hairs. Enclosure of metathorax rounded behind, not bounded by a distinct line, rather strongly subreticulately wrinkled. Sides of metathorax with numerous whitish hairs.

Legs dark, ordinary. Wings hyaline; nervures and stigma pale honey-yellow; subcostal nervure black. Third submarginal not narrowing one-half to marginal.

Abdomen pruinose from short greyish-white pubescence, except dorsum of first and second segments, which are bare. First segment with very fine scattered punctures; second segment with much closer punctures. The shape of the abdomen is rather longer and more cylindrical than is usual.

Lab. Santa Fé, N.M., July 4, 1894 (Ckll. 1228).

At first it seemed very difficult to clearly separate *perdificilis* from its allies; but close scrutiny shows it to be distinct.

From *semibrunneus* it is recognized by its larger size, dullish thorax, mesothorax not so sparsely punctured and strongly green, and pruinose abdomen.

H. pruinus has the abdomen broader than that of *per-*

difficilis and distinctly green; the metathorax also is different and the punctuation of the first abdominal segment very much closer. *H. Cressonii* has the pubescence of the abdomen pale fulvous and the metathorax blue-green.

It may be added here that the altitude of Las Cruces is about 3800 feet, while that of Sta. Fé is 7000 feet.

Las Cruces, New Mexico, U.S.A.,

May 2, 1895.

XII.—On some *Perichætæ* from the Eastern Archipelago collected by Mr. Everett. By FRANK E. BEDDARD, M.A., F.R.S., and SOPHIE M. FEDARB.

IN the present paper we propose to describe some new species of *Perichætæ* from the East which were collected by Mr. Everett and kindly forwarded to one of us some months ago.

Although there are nearly one hundred species of *Perichæta* known to science at the present time, the bulk of them being natives of the Oriental Region, the particular islands, viz. Borneo and Palawan, from which our specimens come have been but little investigated as regards the present group of animals. We were not, therefore, surprised to find that the majority of the species were new. In addition to the new species, the collection also contained the following, which have not been previously recorded from this part of the world:—

Pontoscolex corethrurus (F. Müller). Merabah, North Borneo.

Megascolex armatus, F. E. B. Padas Valley, North Borneo.

Both these species are widely distributed forms.

Perichæta Everetti, sp. n.

The length of this species is about 300 millim. and the diameter at the widest part 12 millim.

It has a marked reddish-purple colour dorsally.

The clitellum occupies the segments xiv.—xvi. and is without setæ.

The male pores are separated by sixteen setæ.

The genital papillæ are developed on segments xix.—xxi. There is a pair on each of these segments, long and narrow in